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[New Hampshire Code of Administrative Rules](#)
[Env-Ws 367](#)

Readopt with amendment Part Env-Ws 367 eff. 6-4-97 (doc. # 6521), to read as follows:

PART Env-Ws 367 CERTIFICATION OF WATER WORKS OPERATORS

Statutory Authority: RSA 332-E:3

Env-Ws 367.01 Purpose.

(a) RSA 332-E establishes the requirements for the certification of operators of public water system treatment plants and distribution systems.

(b) The purpose of these rules is:

(1) To assure that operators of water treatment plants and distribution systems are qualified by having the expertise to properly operate and maintain such facilities; and

(2) To protect public health.

Env-Ws 367.02 Applicability. These rules shall apply to all community public water systems and non-transient, non-community public water systems.

Env-Ws 367.03 Definitions.

(a) "Advisory committee" means the 5 member committee established in RSA 332-E:2.

(b) "Certificate" means a certificate as defined in RSA 332-E:1,II, namely "a certificate of competency issued by the department stating that the operator has met the particular requirements set by the department for certification at his level of operation."

(c) "Community water system" means a community water system as defined in RSA 485:1-a,I, namely "a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents."

(d) "Complete treatment" means a combination of unit treatment processes including, but not limited to, disinfection, flocculation, sedimentation, and filtration.

(e) "Continuing Education Unit" (CEU) means 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.

(f) "Department" means "department" as defined in RSA 332-E:1,III, namely "the department of environmental services and includes staff personnel designated by the commissioner to serve on the staff committee responsible for the certification of operators."

(g) "Disinfection" means a process, used to destroy harmful bacteria which includes, but is not limited to, chlorination, ultraviolet, and ozone treatment.

(h) "Filtration" means the filtering of water through media which includes, but is not limited to, membranes, sand, coal, activated carbon, diatomaceous earth, or mixed-type filter media.

(i) "Fire protection" means a water system that has fire hydrants installed on its water distribution system that is designed to be capable of supplying a sufficient quantity of water with adequate pressure to be used for fire fighting purposes.

(j) "Flocculation" means a treatment process using chemicals designed to assist the sedimentation or clarification process.

(k) "Non-transient, non-community water system" means a non-transient non-community water system as defined in RSA 485:1-a,XI, namely "a system which is not a community water system and which serves the same 25 people, or more, over 6 months per year."

(l) "Operator" means operator as defined in RSA 332-E,1,IV, namely "the individual who has full responsibility for the operation of a water treatment plant or water distribution system and any individual who normally has charge of an operating shift, or who performs important operating functions including analytical control."

(m) "Operator experience" means the time an operator has been actively engaged in the satisfactory performance of his or her duties at a community or non-transient, non-community water system.

(n) "Operator-in-training" means an applicant who has satisfactorily met the education and examination requirements but who has not had sufficient experience to meet the full requirements for the grade for which the applicant has applied.

(o) "Population served" means the determination of population for the classification of a water distribution system by using an equivalent of 100 gallons per capita per day.

(p) "Primary water system operator" means an individual certified at a treatment or distribution grade equal to or greater than the classification of the water system, who has been designated by the owner as responsible for the operation of the water system in accordance with Env-Ws 367.15.

(q) "Public water system" means a "public water system" as defined in RSA 485:I-a,XV.

(r) "Responsible charge experience" means the time an operator is actively engaged in supervising an operator of a plant or system at the next lower operator grade.

(s) "Sedimentation or clarification" means the hydraulic removal of settleable solids through horizontal or vertical flow sedimentation tanks, and includes such other removal processes, patented or otherwise, as tube settling and pulsating/floating sludge beds.

(t) "Source" means the source of water supply, including wells, springs, and surface waters such as lakes and streams.

(u) "Water distribution system" means water distribution system as defined in RSA 332-E:1,V, namely "that portion of the public water system which includes pipes, storage facilities, pressure booster facilities, and all measuring and control devices used to convey potable water to the system users."

(v) "Water treatment plant" means water treatment plant as defined in RSA 332-E:1,VI, namely "the portion of the public water supply system which in some way alters the physical, chemical, or bacteriological quality of the water being treated."

Env-Ws 367.04 Application for Certificates.

(a) An applicant for operator certification shall file an application with the department as specified in RSA 332-E:4.

(b) Fees shall not be returned should the applicant fail to pass an examination.

(c) An additional fee shall be required for re-examination as specified in RSA 332-E:5(IV).

Env-Ws 367.05 Examinations.

(a) The department shall administer written examinations to applicants as specified by RSA 332-E:5.

(b) An applicant who fails to pass an examination may request a review of the applicant's examination at the water division office of the department.

Env-Ws 367.06 Issuance of Certificates.

(a) Upon satisfactory fulfillment by an applicant of the requirements provided in RSA 332-E and Env-Ws 367, the department shall issue to the applicant a certificate as specified in RSA 332-E:6, I designating his or her competency.

(b) Certificates shall be renewable as specified in RSA 332-E:6 unless revoked for cause pursuant to Env-Ws 367.08 or replaced by one of a higher grade.

(c) An applicant shall successfully pass the examination.

(d) Certificates of proper classification may be issued without examination in accordance with RSA 332-E:7.

Env-Ws 367.07 Renewal of Certificates.

(a) The department shall renew a certificate in accordance with RSA 332-E:4.

(b) An operator applying for renewal shall complete the number of contact hours of instruction related to public water system operation, design, or maintenance as specified in Table 367-1, below:

Table 367-1
Required Contact Hours
Water Works Related Instruction

Grade	Treatment	Distribution
1A	5 hours	5 hours
I	20 "	20 "
II	20 "	20 "
III	20 "	20 "
IV	20 "	20 "

(c) The number of required hours shall not be additive when an operator is certified in both treatment and distribution. For example, a grade I operator certified for both treatment and distribution shall require only 20 hours of continuing education for the 2-year interval.

(d) An operator shall submit documents verifying completion of the courses identified in (e) below to the department before the department reissues the certificate.

(e) The following courses shall be approved and contact hours credited as follows:

- (1) One college credit in chemistry, mathematics, biology, engineering, or environmental science shall be equal to 20 contact hours;
- (2) The course entitled "Water System Design, Operation and Maintenance", consisting of approximately 60 contact hours of instruction, offered annually by the department, shall be equal to the number of hours in attendance, with total credit not to exceed 20 contact hours over 2 years;
- (3) The grade 1A course entitled "Small System Operation", consisting of approximately 10 contact hours of instruction offered by the department shall be equal to the amount of hours attended, with a maximum total credit being 10 contact hours over 2 years; and
- (4) The technical meetings of the New Hampshire water works association (NHWWA), american water works association (AWWA), and new england water works association (NEWWA) shall be equal to the amount of hours attended with the maximum credit being 5 contact hours per technical meeting per day.

(f) The operator may apply to the department for credit for other waterworks seminars and education courses by submitting a description of the course, material covered, institution offering the course, and instructor credentials to the department. Credit shall be given if the department determines the course to be comparable to a course offered by the department or the NHWWA, AWWA, or NEWWA.

(g) The operator may apply for credit for completing self-study educational packets. The operator shall submit information or the actual texts describing the material covered, institution offering the course, and credentials of those providing critique of student work. Credit shall be given if the department determines the course was completed and understood by the operator.

(h) If the renewal fee is not paid in accordance with RSA 332-E:4,V, the certificate shall be deemed expired.

(i) The operator may apply for renewal as specified in Env-Ws 367.07 within 3 months of the certificate expiration date.

(j) If the operator fails to apply for renewal within 3 months of the certificate expiration date as specified in (i) above, the operator shall apply for certification as specified in Env-Ws 367.04, Env-Ws 367.05, and Env-Ws 367.06.

Env-Ws 367.08 Suspension, Revocation or Refusal to Renew a Certificate.

(a) If the advisory committee receives information which indicates that good cause, as defined in (f) below, exists to suspend or revoke the certificate, the advisory committee shall proceed in accordance with

RSA 332-E:9 and Env-C 200.

(b) After proceeding in accordance with (a), above, the advisory committee shall:

(1) Revoke the certificate if it determines that the reason that good cause exists cannot be corrected to conform to applicable requirements; or

(2) Suspend the certificate, subject to (d) below, if it determines that the reason that good cause exists can be corrected to conform to applicable requirements.

(c) If a certificate is suspended pursuant to (b) above, the advisory committee shall not reinstate the certificate until:

(1) The reason that good cause exists has been corrected to conform with applicable requirements; and

(2) The operator submits a written request to the advisory committee requesting that the certificate be reinstated.

(d) If, after receiving a request for reinstatement of a certificate, the advisory committee receives information which indicates that good cause, as defined in (f) below, exists to refuse to renew the certificate, the advisory committee shall proceed in accordance with (a), above.

(e) After proceeding in accordance with (a) above, the advisory committee shall:

(1) Refuse to renew the certificate, if it determines that good cause exists which cannot be corrected to comply to applicable requirements; or

(2) Renew the certificate on the basis that good faith efforts have been made to comply with applicable requirements.

(f) Good cause to suspend, revoke, or refuse to renew a certificate shall include the following:

(1) Failing to use care, judgment, and knowledge in the performance of the operator's duty;

(2) Obtaining a certificate through fraud, deceit, or falsification;

(3) Submitting false or misleading information regarding any application for certification or renewal;

(4) Submitting false or misleading operational documentation relating to

the performance and monitoring requirements of a public water system; and

(5) Failing to submit required operational documentation to applicable regulatory agencies.

Env-Ws 367.09 Classification of Water Treatment Processes.

(a) Treatment processes shall be classified into 5 grades based on complexity, ranging from grade I-A, the least complex, to grade IV, the most complex.

(b) Treatment complexity shall be determined by a point system, as described in Table 367-2 below:

Table 367-2
Grades of Water Treatment Plant Complexity

<u>Grade</u>	<u>Point Total</u>
Grade I-A	Treatment for water supplies serving less than 500 people or 200 service connections, with no fire protection and less than 16 points
Grade I	0-30 points
Grade II	31-55 points
Grade III	56-75 points
Grade IV	76 points or more

(c) A non-transient, non-community public water system, as defined in RSA 485:1-a, XI, without fire protection, and having less than 16 points, shall be classified as a grade I-A treatment system, regardless of population served.

(d) For purposes of certification, a groundwater source without treatment, that is pumping only, shall be considered to be a distribution system and not a treatment process.

(e) Where there are multiple treatment facilities in different locations, each location or facility shall be graded independently and the highest grade shall be the classification for the overall system.

(f) The points shall be assigned using Table 367-3 and shall then be summed to determine the total points.

(g) Each treatment process shall have points assigned only once.

(h) The assignment of points for treatment processes shall be in accordance with Table 367-3, below:

Table 367-3

Assignment of Points for Treatment Processes

ITEM	POINTS (pt)
A. System Size (0 point minimum to 20 point maximum)	
1. Maximum population or part served, peak day (1 point minimum to 10 points maximum; 0 points for populations <500)	1 pt per 10,000 or part thereof
2. Design flow (average day) or peak month's flow (average day), whichever is larger (1 point minimum to 10 points maximum; 0 points for populations <500)	1 pt per million gallons per day or part thereof
B. Water supply sources	
1. Groundwater (0 points for populations <500)	3
2. Groundwater under the influence of surface water	5
3. Surface water	5
4. Average raw water quality varies enough to require treatment changes 10% of the time. Range 0 to 10 points with the following guidelines: Little or no variation = 0 points High variation = 10 points	0 - 10
5. Raw water quality is subject to:	
a. Taste, odor level, or both	3
b. Color level	3
c. Iron, manganese levels, or both	5
d. Turbidity level	5
e. Coliform, fecal counts, or both	5
f. Algae growth	5

6. Raw water quality is subject to:	
a. Industrial and commercial waste pollution	5
b. Agricultural pollution	5
c. Urban runoff, erosion, and storm water pollution	3
d. Recreational use	2
e. Urban development and residential land use pollution	2
C. Chemical Treatment / Addition Processes:	
1. Fluoridation	5
2. Disinfection:	
a. Gaseous chlorine	5
b. Liquid or powdered chlorine	5
c. Chlorine dioxide	7
d. Ozonation	10
3. pH adjustment (calcium carbonate, carbon dioxide, hydrochloric acid, calcium carbonate, calcium hydroxide, sodium hydroxide, sulfuric acid)	5
4. Stability or corrosion control (calcium oxide, calcium hydroxide, sodium carbonate, sodium hexametaphosphate)	5
D. Coagulation & Flocculation Process:	
1. Chemical addition (1 point for each type of chemical coagulant added, maximum 5 points) (aluminum sulfate, bauxite, ferrous sulfate, ferric sulfate, calcium oxide, bentonite, calcium carbonate, carbon dioxide, sodium silicate)	0-5
2. Rapid mix units:	
a. Mechanical mixers	3
b. Injection mixers	2
c. In-line blenders	2
E. Clarification / Sedimentation Process:	
1. Horizontal flow (rectangular basins)	5

2. Horizontal flow (round basins)	7
3. Up-flow solid contact sedimentation	15
4. Inclined plate sedimentation	10
5. Tube sedimentation	10
6. Dissolved air flotation	20
F. Filtration Process:	
1. Single media filtration	3
2. Dual or mixed media filtration	5
3. Micro screens	5
4. Diatomaceous earth filters	5
5. Cartridge filters	5
6. Slow sand filters	5
7. Direct filtration	5
8. Greensand filtration	10
G. Other Treatment Processes:	
1. Aeration	3
2. Packed tower aeration	5
3. Ion-exchange/softening	5
4. Lime-soda ash softening	20
5. Copper sulfate treatment	5
6. Powdered activated carbon	5
H. Special Processes (reverse osmosis, electrodialysis)	15
I. Residuals Disposal:	
1. Discharge to lagoons	5
2. Discharge to lagoons and the raw water source	8
3. Discharge to raw water	10
4. Disposal to sanitary sewer	3

5. Mechanical dewatering	5
6. On-site disposal	5
7. Land application	5
8. Solids composting	5
J. Facility Characteristics	
1. Supervisory Control and Data Acquisition (SCADA) Instrumentation (0 point minimum to 6 point maximum)	
a. The use of SCADA or similar instrumentation systems to provide data with no process operation	0
b. The use of SCADA or similar instrumentation systems to provide data with limited process operation	2
c. The use of SCADA or similar instrumentation systems to provide data with moderate process operation	4
d. The use of SCADA or similar instrumentation systems to provide data with extensive or total process operation	6
2. Clearwell size less than average day design flow	5

(i) The department shall assign points to treatment processes not specified in Table 367-3 in which the number of points assigned shall be directly proportional to the complexity of process operations and degree of skill required for its successful operation.

(j) The department shall raise or lower the classification of a plant by one grade if the department determines that the complexity of plant operations and degree of skill required for its successful operation are not accurately reflected by the point system.

(k) Criteria for reassignment shall include inconsistency with other similar plants or raw water quality varies severely or is subject to periodic serious industrial pollution.

Env-Ws 367.10 Classification of Water Distribution Systems.

(a) Water distribution systems shall be classified into 5 grades, as specified in Table 367-4 below:

Table 367-4
Grades of Water Distribution System Complexity

<u>Grade</u>	<u>Population Served</u>
Grade I-A	Less than 500 people or 200 service connections with no fire protection
Grade I	1,500 or less (except grade I-A systems)
Grade II	1,501 - 15,000
Grade III	15,001 - 50,000
Grade IV	50,001 - larger

(b) For purposes of certification, a groundwater source without treatment shall be considered to be a distribution system and not a treatment plant.

(c) All non-transient, non-community public water systems without fire protection shall be classified as grade I-A distribution systems, regardless of population served.

(d) The department shall raise or lower the classification of a distribution system by one grade if the department determines that the complexity of the distribution system and the degree of skill required for its successful operation are not accurately reflected by the population served and other criteria. Criteria for reassignment shall include inconsistency with other similar distribution systems or public health and safety concerns.

Env-Ws 367.11 Grades of Operators. There shall be 5 grades of operators to parallel the classification of treatment and distribution systems described in Env-Ws 367.09 and Env-Ws 367.10. An operator may operate a plant or system of lower grade than the operator's certified grade.

Env-Ws 367.12 Qualifications of Operators.

(a) Applicants for examination shall:

- (1) Be in a physical condition which enables an operator to satisfactorily perform his or her intended duties relative to the size and complexity of an operator's particular water system;
- (2) Be able to read and write in the English language; and
- (3) Submit evidence of the following minimum number of years of education and experience for the desired operator grade:
 - a. For a grade 1A certificate, a high school diploma or general equivalency diploma and 6 months of operator experience or completion of the "Small System Operation" course as specified in Env-Ws 367.07(e)(3);

- b. For a grade I certificate, a high school diploma or general equivalency diploma and one year of operator experience;
 - c. For a grade II certificate, a high school diploma or general equivalency diploma, and 3 years operator experience;
 - d. For a grade III certificate, a high school diploma or general equivalency diploma, 2 years of post-secondary education, and 4 years operator experience; and
 - e. For a grade IV certificate, a high school diploma or general equivalency diploma, 4 years of post-secondary education and 6 years operator experience.
- (b) At least 50 percent of experience requirements shall be actual operating experience in a plant or system.
- (c) Educational requirements as specified in Env-Ws 367.12(a) shall be the following:
- (1) High school diploma or general equivalency diploma;
 - (2) Post-secondary education with a concentration in environmental engineering, civil engineering, environmental sciences or related fields in which 30 semester hours shall be equivalent to 45 quarter hours which shall be equivalent to one year;
 - (3) Continuing education units (CEU) which include, but are not limited to, specialized operator training courses, seminars, and related college courses, may be used to satisfy post-secondary education requirements;
 - (4) For CEUs identified in (3) above:
 - a. 10 classroom hours of courses as specified in Env-Ws 367.07 (e), (f), and (g) shall be equivalent to one CEU; and
 - b. 45 CEUs shall be equivalent to one year of post-secondary education; and
 - (5) The department may substitute educational requirements for Grade IA operators if:
 - a. The applicant's examination score exceeds 80%; and
 - b. The applicant's intended employer and duties are compatible with the applicant's demonstrated level of training, knowledge, and experience.

(d) One and one-half years of responsible charge experience at the operator level may be substituted for one year of the education requirements at the post-secondary level, subject to a maximum of one year credit for grade III, and 2 year credit for grade IV.

(e) One year of post-secondary education may be substituted for one year of operator experience, not to exceed 50 percent of the experience requirements in (d), above.

(f) Education, training, or experience shall not be substituted if used to meet any other education or experience requirements.

Env-Ws 367.13 Operator-in-Training.

(a) An applicant for grade I, II, or III certification as a water treatment plant or distribution system operator may take an examination in a given grade, if the individual has submitted to the department evidence of education or experience in technical fields other than water works, for the purpose of becoming an operator-in-training (OIT).

(b) Prerequisites for examination, and designation as an OIT shall be the same as the prerequisites in grade I, II and III except that experience time not to exceed 50% in water works shall be waived.

(c) The department shall designate the applicant as an OIT upon the applicant's passing the examination.

(d) Upon the applicant's submitting evidence that the applicant has completed the experience as specified in Env-Ws 367.12(a)(3), the department shall terminate the applicant's designation as an OIT and the department shall issue a certificate in accordance with Env-Ws 367.06(a).

Env-Ws 367.14 Responsibilities of a Water System Owner.

(a) The owner of a community public water system or non-transient, non-community public water system shall:

(1) Comply with RSA 485 and Env-Ws 300 through Env-Ws 386;

(2) Designate a primary water system operator, who shall be a certified operator responsible for the duties as specified in Env-Ws 367.15;

(3) Have a certified operator available whenever the system is in operation;

(4) Ensure that any operating personnel making process control decisions about water quality or quantity is a certified operator; and

- (5) Notify the department in writing within 10 days of a change in the designated primary operator.
- (b) The owner of a Grade IA water system, as defined in Env-Ws 367.09 and Env-Ws 367.10, may retain the operational duties as specified in Env-Ws 367.15(a)(7), (8), and (9), below.
- (c) The water system owner shall state such designation in (a)(2) above in writing and submit a copy to the department.

Env-Ws 367.15 Operational Duties of a Primary Water System Operator.

- (a) Where designated, pursuant to Env-Ws 367.14, the primary water system operator shall:
 - (1) Conduct routine inspections of the water system in accordance with Env-Ws 360.12;
 - (2) Oversee operation and maintenance to maintain the safety and reliability of water service by ensuring that repairs and improvements are performed properly and in a timely manner, or, in the alternative, notifying the owner of the need for such repairs and improvements;
 - (3) Be knowledgeable in all operational aspects of the water system;
 - (4) Have supervisory authority, including supervision of operating personnel, where applicable;
 - (5) Oversee all chemical monitoring, bacterial monitoring, and other monitoring required pursuant to Env-Ws 300;
 - (6) Attend any sanitary surveys conducted by state personnel;
 - (7) Oversee wellhead protection, watershed protection, and other activities associated with chemical monitoring waivers or otherwise required by Env-Ws 378;
 - (8) Conduct all reporting necessary in order for the water system to comply with the requirements of Env-Ws 300; and
 - (9) Keep complete and accurate water system records as required by Env-Ws 304.
- (b) The primary water system operator shall communicate any regulatory non-compliance issues to the owner or manager of the water system.
- (c) The primary operator may designate other person(s) to perform any duties specified in (a), above, provided that the responsibility for execution of these duties remains with the primary operator.